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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,630	01/25/2001	Hideo Miyake	1614.1116	5739

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EXAMINER
LI, AIMEE J

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/768,630	MIYAKE ET AL.
	Examiner	Art Unit	
	Aimee J. Li	2183	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *16 February 2005*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-5* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-5* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-5 have been considered.

Papers Submitted

2.   It is hereby acknowledged that the following papers have been received and placed of

record in the file: Amendment as received on 16 February 2005 and Two-month Extension of

Time as received on 16 February 2005.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-5 are rejected under 35 U.S.C. 102(e) as being taught by Gottlieb, U.S. Patent

Number 6,298,431 (herein referred to as Gottlieb).

5.   Referring to claim 1, Gottlieb has taught a computer which performs parallel processing

of a plurality of programs in a time-division fashion, comprising:

> a.   Hardware resources divided into a plurality of areas, the hardware resources being
>
> used in common by the plurality of programs (Gottlieb column 2, lines 47-62;
>
> column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line
>
> 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
>
> b.   An evacuation unit which records identification information identifying a first
>
> program, and evacuates information stored in an area of said plurality of areas if

the area is necessary for execution of a second program and is being used for

execution of the first program (Gottlieb column 2, lines 47-62; column 3, lines

39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7,

line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the

identification information is inherent to the banked shadow registers, since some

sort of identification is necessary for the system to correctly identify which thread

information must be loaded on a thread switch.

c.   A restoration unit which restores the evacuated information to the area based on

the identification information when the second program comes to a halt or to an

end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-

60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11;

Figure 1; and Figure 2).

6.   Referring to claim 2, Gottlieb has taught an interruption unit which brings about

interruption processing if the area is necessary for execution of a second program and is being

used for execution of the first program, wherein said evacuation unit operates as part of the

interruption processing to record the identification information and to evacuate the information

stored in the area (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60;

column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and

Figure 2).

7.   Referring to claim 3, Gottlieb has taught a computer which performs parallel processing

of a plurality of programs in a time-division fashion, comprising:

a. Hardware resources divided into a plurality of areas, the hardware resources being used in common by the plurality of programs (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);

b. An evacuation unit which records identification information identifying a first program, and evacuates information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution of the first program and a second area of said plurality of areas are necessary for execution of a second program and are being used for execution of the first program, said evacuation unit subsequently evacuating information stored in the second area when use of the second area becomes actually necessary for execution of the second program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.

c. A restoration unit which restores the evacuated information to the area based on the identification information when the second program comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

8.   Referring to claim 4, Gottlieb has taught a method of controlling a computer which

performs parallel processing of a plurality of programs in a time-division fashion, comprising the

steps of:

      a.   Providing hardware resources divided into a plurality of areas, the hardware

           resources being used in common by the plurality of programs (Gottlieb column 2,

           lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to

           column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);

      b.   Recording identification information identifying a first program, and evacuating

           information stored in an area of said plurality of areas if the area is necessary for

           . execution of a second program and is being used for execution the first program

           (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60;

           column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11;

           Figure 1; and Figure 2). In regards to Gottlieb, the identification information is

           inherent to the banked shadow registers, since some sort of identification is

           necessary for the system to correctly identify which thread information must be

           loaded on a thread switch.

      c.   Restoring the evacuated information to the area based on the identification

           information when the second programs comes to a halt or to an end (Gottlieb

           column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5,

           line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and

           Figure 2).

9.   Referring to claim 5, Gottlieb has taught a method of controlling a computer which

performs parallel processing of a plurality of programs in a time-division fashion, comprising the

steps of:

   a.   Providing hardware resources divided into a plurality of areas, the hardware

           resources being used in common by the plurality of programs (Gottlieb column 2,

           lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to

           column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);

   b.   Recording identification information identifying a first program, and evacuating

           information stored in an area of said plurality of areas if the area is necessary for

           execution of a second program and is being used for execution the first program

           and are being used for execution of the first program, followed by subsequently

           evacuating information stored in the second area when use of the second area

           becomes actually necessary for execution of the second program (Gottlieb column

           2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to

           column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

           In regards to Gottlieb, the identification information is inherent to the banked

           shadow registers, since some sort of identification is necessary for the system to

           correctly identify which thread information must be loaded on a thread switch.

   c.   Restoring the evacuated information to the area based on the identification

           information when the second programs comes to a halt or to an end (Gottlieb

           column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5,

line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and

Figure 2).

Response to Arguments

10.   Applicant's arguments filed 16 February 2005 have been fully considered but they are not

persuasive. Applicant argues in essence on pages 5-6

> In the claimed invention and in contrast to Gottlieb, the hardware resources are
>
> use in common by a plurality of tasks, or programs, and are not dedicated to
>
> individual tasks as they are in Gottlieb.

11.   This has not bee found persuasive. Gottlieb teaches in column 4, lines 19-39 that the

banked shadow register file stores the inactive threads, i.e. the inactive threads share the banked

shadow register file, since they all use some portion of it. The standard register file is shared

since, when a thread is active, then it uses the standard register file. For example, when thread A

is active it uses the standard register file. When thread A becomes inactive, it is stored in the

banked shadow register file, while thread B becomes active and uses the standard register file.

Therefore the hardware resources are shared, since all the threads use all of the hardware

resources.

Conclusion

12.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

13.   A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after
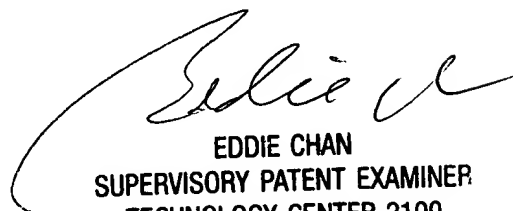
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Aimee J. Li whose telephone number is (571) 272-4169. The

examiner can normally be reached on M-T 7:30am-5:00pm.

15.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

16.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJL
Aimee J. Li
12 May 2005

EDDIE CHAN
SUPERVISORY PATENT EXAMINER
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